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BIOLOGICAL EVALUATION OF THE TEXAS LEAF CUTTING ANT ON THE KISATCHIE NATIONAL FOREST

by

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Abstract

An evaluation of the Texas leaf-cutting ant on the Kisatchie National Forest revealed 22 active colonies on 255 acres of pine regeneration land. Damage to seedlings as well as established saplings was severe in many locations. Forest Pest Management recommended that the ants be controlled by fumigation with methyl bromide.

INTRODUCTION

In response to a request by Kisatchie National Forest personnel, Forest Pest Management entomologists from the Alexandria Field Office conducted a biological evaluation of a Texas leaf cutting ant problem in pine regeneration areas on the Kisatchie Ranger District. The purpose of the evaluation (conducted on January 28, 1982) was to determine the current status of the Texas leaf cutting ant activity and suggest control options if necessary.

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BIOLOGY OF THE TEXAS LEAF CUTTING ANT

The Texas leaf cutting ant (Atta texana Buckley), also commonly referred to as the town ant, fungus ant or night ant, has been recognized as a serious pest of pine seedlings since 1934 (Smith 1939). Its known range consists of west-central Louisiana and east Texas. The preferred habitat is deep, sandy, well-drained soil. Towns (or colonies) can be noted by a large number of crescent-shaped mounds which lead to extensive underground nests. Mounds belonging to one town may encompass an area of an acre or more, depending upon the age of the colony (Bennett 1958).

The ants are reddish-brown in color and the workers range in size from 1/16" - 1/2" long. Workers all have 1 pair of spines on the back of the head and 3 spines on the thorax. These distinguish them from similar ants (Stewart 1981).

Town ants subsist mainly upon a fungus they cultivate in underground cavities. The growth medium for this fungus consists of pieces of foliage, buds, and sometimes bark of vegetation in the colony vicinity. The ants concentrate on pines only in winter and early spring when no other green matter is available. When pine seedlings are planted in town ant infested areas, the seedlings can be stripped clean of needles and buds in less than a day's time.

Activity can be seen during the day on clear or partly cloudy days with temperatures between 45 and 80°F. On cold days and days with constant rainfall, ants remain below ground. On days above 80°F, foraging occurs after sunset (hence the name: night ants).

GROUND SURVEY RESULTS

Examination on January 28, 1982, of 4 pine regeneration areas revealed pine seedling defoliation in areas where the town ant nests were established. (The results of the ground survey are shown in table 1.) Damage to the seedlings ranged from needles cut off close to the bud on longleaf pines to removal of buds, all needles and sections of bark on loblolly pines. Defoliation was also noted on 4 - 5 foot saplings established previously in the areas.

The extent of defoliation varied with the size and number of town ant colonies present. In the 150 acre regeneration area, 15 towns were located. This area, planted in 1981, failed due to a combination of drought as well as town ant defoliation.

Table 1. Summary of town ant ground check data for Kisatchie Ranger District.

Pre-Treatment Survey
February 5, 1982

Regeneration Area	Compart. No.	Stand No.	Forest Type	Approx. Size (acres)	No. of Colonies	Approx. Acres Defoliated	Percent Defoliated
1	11	40	Loblolly	15	3	10	66.6
2	11	5	Longleaf	40	2	10	25.0
3	11	3	Longleaf	50	2	5	10.0
4	14	17	Loblolly	150	15	Not yet planted	

TOWN ANT CONTROL OPTIONS

1. Treat the individual towns with methyl bromide before planting or replanting.

   Methyl bromide is a fumigant that is recommended for control of the town ant. It should be injected into the nest on cold (not above 50° F) overcast days during winter and early spring when the ants are congregated deep within the main town. A post-suppression check is necessary 5 - 10 days after treatment on a warm day. If the methyl bromide treatment is effective, little or no activity should be present.

2. Do nothing and allow defoliation to occur.

   These areas could be planted and the losses accepted.

3. Plant only in areas that are devoid of town ants.

   With this option, areas that are heavily infested with town ants are allowed to regenerate naturally over time hoping that some seedlings will eventually survive.

RECOMMENDATION

Forest Pest Management recommended that treatment with methyl bromide be conducted as soon as possible to permit planting of seedlings while weather conditions were acceptable.

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